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## THE WORK OF HYDROMETEOROLOGICAL INSTITUTES

Ye. K. Fedorov, Corresponding Member, Academy of Sciences USSR, reported, at the March 25 meeting of the Department of Geologico-Geographical Sciences, on basic trends in the research of leading hydrometeorological institutions.

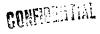
All work on the theory and practice of forecasting weather and conditions of rivers and seas is concentrated in the Central Weather Institute Central Forecasting Institute? /, which is devising new methods of forecasting besides the usual ones. For example, much attention is given to further improvement of frontological analysis and short-range forecasting and to the possible application of hydrodynamics in the calculation of the future status of individual meteorological elements. Long-range forecasts are produced using the method developed by Mulitanovskiy and his school. Soon, long-range weather forecasts will also be obtained by pure computation. The Central Weather Institute also produces long-range hydrological forecasts.

Turbulence, heat exchange between the earth and the atmosphere, actinometry, atmospheric electricity, visibility, etc., are studied in Main Geophysical Observatory. The compilation of climatic handbooks will be completed shortly; later, a climatic atlas of the USSR will be published from this material. At present, small climatological computations and special maps intended for specific needs are being produced. The Main Geophysical Observatory, as before, supervises all meteorological observations in the network. It has the task of reorganizing the Pavlovsk institutions destroyed by the Germans.

The State Oceanological Institute was organized in 1943 and was occupied with defense work during the war. Recently, important theoretical problems on heat exchange between atmosphere and sea, on the transformation of air masses over the sea etc., have been studied in this institution.

Hydrological methodology for the entire hydrological network and processes such as the formation of discharges and rain floods, ice pressure on hydrotechnical constructions, etc, are investigated in the State Hydrological Institute, which has also begun the enormous work of describing all the rivers of the Soviet Union This institution is also faced with the task of organizing a large and well-equipped experimental lass where hydrological processes can be modeled.

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The Central Aerological Chaervatory was organized comparatively recently to study the free atmosphere and to develop proper methods of study. Already this new institution lists many important achievements, including an improved radio-scade construction, improved methodology for vertical airplane sounding and horizontal weather surveying using airplanes, atmospheric studies using ballons, etc.

The Central Construction Bureau is working to improve the technical eqipment of the hydrometeorological network, by devising experimental models of the instruments and by implementing their series production. The bureau includes an experimental plant.

The bureau numbers among its accomplishments the development of an automatic radio meteorological station, several of which are already in operation, and a gas barometer which replaces the aneroid.

The Central Scientific Research Institute of the Hydrometeorological Archives is attempting to mechanize the processing of the results of hydrometeorological observations. Since the network of stations and the expeditions of the Hydrometeorological Service produce an immense amount of numerical data, the use of computers for processing these observations is very important. Mechanized processing becomes particularly important in the analysis of the behavior of a set of elements instead of a single element.

The Institute of Terrestrial Magnetism, with the aid of a network of observatories, observes regularly the state of the earth's magnetic field. Recently, this institution organized an ionospheric service, a systematic study of the state of the atmosphere by means of observations on radiowave propagation.

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- 2 -

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